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a critique of John Halverson`s article "Paleolithic Art and Cognition"

Laursen, Bjørn

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Paleolithic Cave Paintings, Mental Imagery and Depiction

- a critique of John Halverson`s article: "Paleolithic Art and Cognition"1)

Bjørn Laursen:

Department of Information and Media Science, University of Aarhus, Niels Juelsgade 84, DK-8200 Århus, Denmark

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ABSTRACT: In this article, I claim that there is a gap between a "generalised mental image" -which is also called a "canonical" image- and a depiction of it. I argue, that it is not possible to depict a "generalised mental image". I analyse the process of depicting.

I oppose John Halverson´s (1992) point of view that "generalised mental images" are represented *directly* in Palaeolithic cave paintings, in what he describes to be an *exact* correspondence. Halverson describes what he calls "outline drawings" in these paintings. He does not take into consideration the quite large number of different ways of depicting that the Palaeolithic actually practised.

Depicting is a process that combines several influences, I argue:

1)a "canonical" image (a "generalised mental image")

2)even sometimes more than one

3)percepts from life

4)and depicting elements as they appear in a concrete visual form during the creation of the visual configuration.

I conclude one may influence and develop "canonical"/"generalised mental images" by means of depicting.

Introduction: In this article I will present and question John Halverson´s chain of arguments, that what the Palaeolithic people depicted in the cave art in southern France and northern Spain, represent directly their generalised mental "canonical" images of their animals.

I argue it is impossible to depict a canonical image without changing and adding aspects during the process of depicting, that the canonical image did not possess before the start of the process of depicting it.

I also argue that it is possible to activate canonical images without changing them; I suggest this may accur if they for example are triggered by words, but not if they are triggered by intentions of transfer to concrete depicting.

Halversons`s thesis about direct depiction:

Halverson claims that:

> "most Upper Palaeolithic depictions directly represent generalised mental images of their animal subjects rather than percepts or recollected scenes from life"(Halverson, 1992, p. 221, abstract)

He claims further that:

> "all these features correspond exactly to those of mental images and Palaeolithic depictions are primarily attempts to copy or render mental images"(1, 224)

If Halverson´s claims were true, the generalised mental image would have following qualities:

-clarity

-stability.

But this does not seem to be what is characteristic in Halverson´s conception of a mental image:

> "On the whole, it is not a very precise, detailed, or stable image"(1, 225)

and later in the essay he claims that:

> "it is context free, imprecise, shifty, very uneideitic."(1, 230).

To claim that anyone would be able to depict such an imprecise, non detailed, non stable imagination *directly* to an engraving or a painting so that it *corresponds exactly* to the imagination does not make sense.

It may be true, that the Palaeolithic depictions to a certain extent might seem to have something in common with canonical images, but this is in no way the same as being the "same as", copies. The hard question is - what is in common?

That does not mean, that the generalised mental images, the canonical images, do not exist and play a role in the depictions made by the Paleolithichs in the caves. They probably do. But it can not be this exact role Halverson suggests, dealing with this cognitively highly relevant subject.

Counter examples and conditions for depicting:

To give counter examples it is necessary to analyse some of the conditions under which this first known depicting in the history of man were made.

How can it be that Palaeolithic people are suddenly capable of producing such a huge amount of cave wall paintings? This phenomenon of producing depictions is "something quite new in human experience"(1, 228). How did they "suddenly" learn?

Is depicting innate?

According to Halverson the Palaeolithic people did not seem to practice by sketching:

> "(nor is it likely that they carried around sketchbook portfolios.)" (1, 224)

This is not an absolutely solid argument. P. M. Grand brings an interesting illustration, that shows engravings on a portable stone, which may be seen as a counter example (fig. 1):

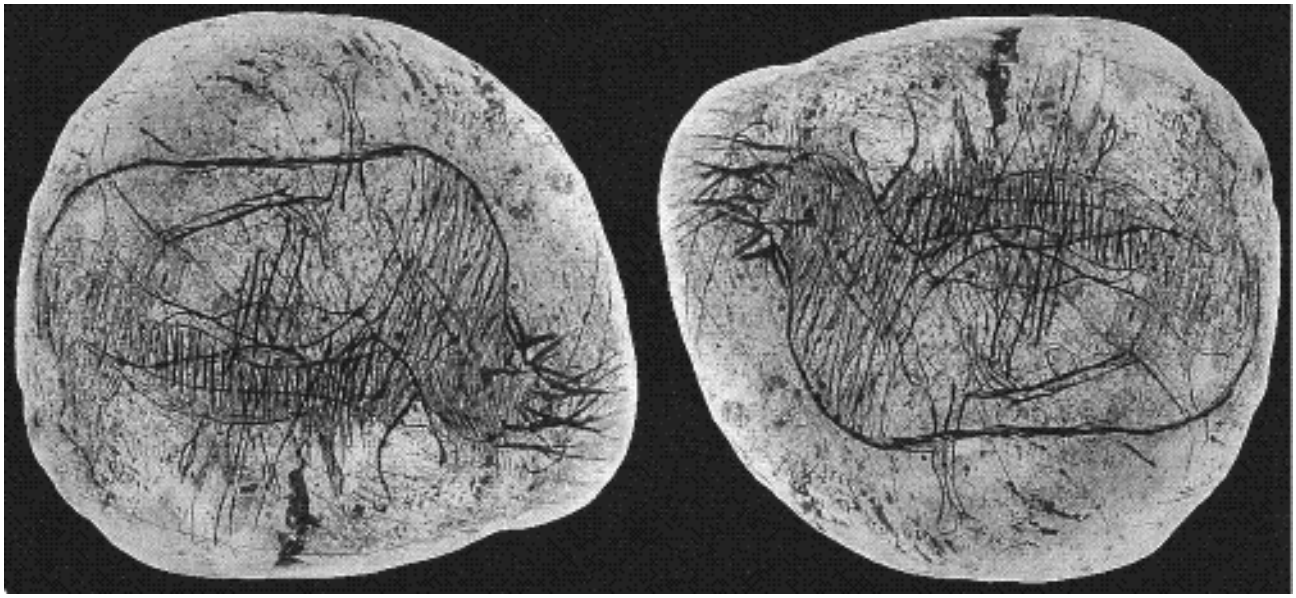


Fig. 1. Flat stone with engravings. The animals are engraved on top of each other and turned into different directions on this portable object. From Laugerie-Haute (Musee Les Eyzies)(3).

Fig. 1a Engraved stone with animals. La Colombière. France. Size 9,5 cm

fig. 1b. Engraving of mammoths. La Magdaleine. France. Size 24,5 cm.

We actually do find some evidence that suggests the Palaeolithic did practice. These examples refer to engravings, and to me, they do look like sketches.

Other visualisations have probably been produced on less solid material, so they have disappeared over the long period of time.

These single counter examples and a lot of following makes the "sudden" appearance of the cave paintings less mysterious, though it must be admitted that in geologic and ethnographic terms, the advent of pictures was sudden e.g. 20-25.000 years ago.

Three important different questions:

I claim, that it is important to take following three questions into consideration, when you are dealing with Halverson´s problem of depicting canonical images, and at the same time stress in what way these questions differ.

You could ask:

1)have you got a generalised mental image of an elephant?

This first question is basic: do we have canonical images or not? I think we have.

2)have you got a generalised mental image of an elephant you can draw?

Concerning the second question, I disagree, that it is a direct and exact copy process, because, as being discussed deeper in the next paragraph, the form of the generalised mental image of an elephant is simultaneously multifaceted (shape, color, texture, attitude), which is not the case with the procedural emerging depiction. It is a late phenomenon that the depiction can be described as simultaneous, it is not until it is finished.

This makes an important difference, because when depicting you have to transform one kind of imaginative and multifaceted form to a different substance, that is:

-perceivable
-procedural
-concrete and
-simultaneously multifaceted

So many people could for good reasons answer the second question in following true way:

"Yes, I think I have got a generalised mental image of an elephant, but I just can not draw it".

3)have you got a generalised mental image for drawing an elephant?

We have no evidence that any human beings before the Palaeolithic made depictions, but many afterwards. Nowadays, as a severe contrast, we live surrounded by depictions. Every day we see lots of them. And in childhood most people even produce them. So to some extent most people are familiar with the basic phenomena of producing a depiction. That is why it is important to *be aware not to mix up* the third question with the two others. You have to distinguish clearly among these three different questions, because they lead in three different directions.

Halverson´s interpretation of the outline:

I think, that Halverson is intertwining the above mentioned three questions when he analyses the outline.

About the generalised mental image of an animal he says:

> "In the former case -imaging a cow- you would almost certainly "see" the beast all by itself without a background or companions. It would, moreover, almost certainly appear standing in profile with a strong outline but with very dimly perceived color, texture, and mass."(1, 224).

I agree that the imagined animal would appear in profile, but in this quotation Halverson is intertwining knowledge from the drawing process (strong "outline") with the canonical image debate when he introduces the outline as a typical phenomenon.

Generalised mental images are certainly not outline drawings!

It is correct that the general shape of the imagined animal is an important feature, but that does not make it an outline. But using an outline is a very relevant tool for trying to show some characteristic features.

I maintain, that an outline drawing can never be the "same as" a generalised mental image, unless it is a generalised mental image of an outline drawing. But that is the only -but here irrelevant- exception from that rule.

An outline drawing might to some extent "look like" a general mental image, but that does not make it "same as". And "same as" or "look like" makes fundamental differences here, as I will show.

That means that the form of the generalised mental image and the form of the outline drawing differ.

But how?

Aspects of the perceptual background for canonical images:

A long distance position to animals is an important part of the background for canonical images in the Palaeolithic hunters culture.

In a later article Halverson gives following description of it:

> "Perhaps the closest visual object in nature to the two-dimensional picture would be a still back-lit figure silhouetted against the sky or other relatively undifferentiated background, such as grassland, especially at a distance greater than 135 m or so where binocular effects cease (Haber and Hershenson 1980) and the object is in fact optically two-dimensional. In good lighting, a visual object, such as an animal, presents a complex optical array that includes color and texture gradients that help define mass: they provide "eidolic" cues (Deregowski 1980, 1990) to three-dimensionality. Such cues are totally lacking in distant silhouette. The only differentiation of luminance is between (dark) figure and (light) ground. Since the interior of the figure is undifferentiated, the only distinguishing feature that remains is its external contour, Where luminance is sharply discontinuous. Now the silhouette of a rhinoceros, mammoth, or deer, if, as in profile, it displays the animal´s distinguishing characteristics even more so, as for instance when there is a "noisy", visually confusing background (of which both natural and man-made camouflage takes advantage). The pictorial outline abstracts from the silhouette its only signifying feature, its occluding edge, or, better, its "occluding bound" (Kennedy and Silver 1974). Thus, although an unnatural artifact, the pictorial outline successfully exploits a fundamental component of natural object perception"(4, 390-391)

The long distance position may indeed be one of the cores in building up generalised mental images of animals in the Paleolithichs way of living, but if they had just seen these animals at a distance at 135 m or more, they would not have survived, which they did.

So "there is more to it than that".

They have been seeing these animals that played an absolutely dominant role in their lives as well from far out as closer distances to close up positions, when getting so near that they could throw the spear before final catch.

Kennedy´s and Silver´s expression "occluding bound" suggests that what is seen is not exactly a pure silhouette, but a bound of one mass (the animals body which is not perceived as being absolutely flat) occluding an other mass (the background which can be as well clear as highly irregular).

And Gregory's comments on objects are also relevant here:

> "The sense organs receive patterns of energy, but we seldom see merely patterns: we see objects. A pattern is a relatively meaningless arrangement of marks, but objects have a host of characteristics beyond their sensory features. They have pasts and futures;"(2, p. 227)

Animals often move in characteristic ways, a distinctive phenomenon that Halverson does not discuss very much, which is an always present factor over time. And they certainly have watched these hunted animals over periods of very long periods of time.

fig. 2. Walking horse. The Cave Le Portel. France. Length 45 cm. (Jel. 309).

They probably followed flocks of them for weeks or more.

Archaeologists describe Palaeolithic people as a culture living in tents(5). That probably means that they have been able to hunt the animals during all the seasons of the year.

About the phenomenon of movement Halverson says about the cave depictions:

> "..great majority show no obvious sign of movement. Of course, there may often be no way to tell the difference between standing and walking postures.."(p. 222)

First you can see that there are absolutely clear counter examples, one of them is found in fig.2.

Second Halverson seems quite uncertain to determine the question of what movement actually is.

It seems as if he narrows the phenomenon to a question only of standing or walking postures.

What about the movement of muscles? What about the pre-stage just before a move?

Movement is not just a question of a body's spatial and topological position, but should also be dealt with as a description of a body as a corpus showing numerous different positions of its whole structure.

Later I will show and discuss a different point of view on movement set forward by the French sculpturer Rodin; it seems to me as if the question of movement, even in Palaeolithic depictions that do not clearly exhibit movement, is an essential part of the communicative strength of these configurations.

But here we will continue to analyse remarkable counter examples to Halverson´s theory:

fig. 3. Flock of reindeers engraved on a bone. Teyjat, France. Length 20 cm.

This depiction of a flock of reindeers is a very elegant visual way of giving an impression of the spatial extension of the mass of bodies and uncountable elements of parts of bodies.

That is visually interpreted as a kind of pattern of legs and antlers except from the animals in each end of what appears as a row.

This is not a generalised mental image but a visual interpretation of a general concrete perceptual experience from life, when Palaeolithic followed flocks like this.

That means, that the engraving shows generalised aspects, that a flock of reindeers has uncountable legs, and that will be interpreted as a generalised semantic feature.

But it is also clear in this illustration, that if you try to point out a canonical image for a flock of reindeers, it becomes more or less impossible, because it will intertwine the semantical knowledge:

- -uncountability, and the concrete perceptions of flocks of reindeers, and add something else:
- -the formal interpretation of this experienced uncoutability, the emergence of a pattern with semantic qualities.

What we see here, I think, could be described as the emergence of a semiosis that is on its way to create a general sign for uncountability represented by a formal transfer from concrete generalised and semantically interpreted perception to this formalised row of legs as "innovative features" towards a sign.

This illustration is also relevant to following statement from Halverson:

> "-but such natural groups are exceptional; that is, there are very few compositions of which we would say with confidence, "This is a herd"..(p. 224)

This surely is one of them where we can be absolutely certain.

Palaeolithic people lived in tents and followed flocks of animals, or else a picture like fig. 3 could never have been produced.

Counterexamples showing attention on mass, form and texture:

About the Palaeolithic perception of animals and the way they tried to depict them, there actually exists more than one kind of evidence. Indeed, there are counter examples to Halverson´s point of view that the Paleolithichs did pay attention to the mass of the animals body, and its texture.

Halverson claims -in the perspective of outline drawing- that:

> "It is also obvious that the artists were far more concerned with the bodily shape or form that any other feature such as color, texture and mass;"(p. 222).

One counter example of interest for the mass is a sculpture of a bison modelled on top of a rock, so that just about a bit more than half of its body is free from the rock:

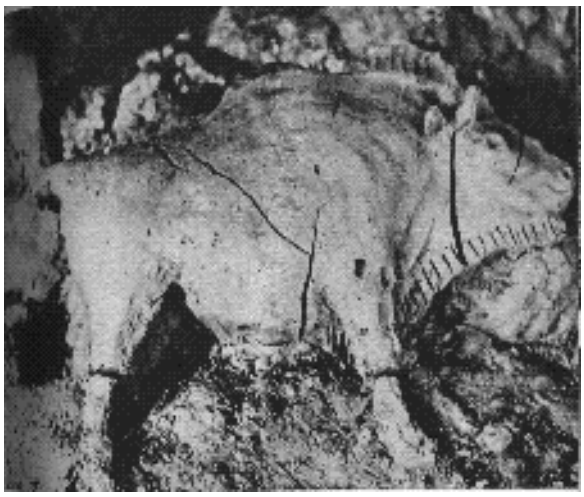


fig. 4. One out of two modelled bison´s; Tuc d´Audoubert, France. Length 61 cm.

This sculpture shows details as for example muscles that cannot refer to mere long distance viewing. It presupposes close up experiences with the phenomenon. It is not just a representation of knowledge of the overall shape. This three dimensional configuration shows the body as a complex spatial form. And if you compare it with fig. 5, you will also find that this animal, a horse, is modelled, but even more, that texture is engraved and painted on this spatial configuration:

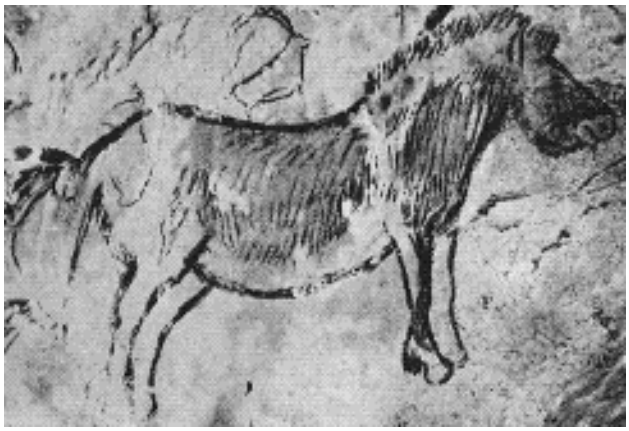


fig. 5. Modelled horse with engraved and painted texture; from Niaux, France. Length 170 cm.

So Halverson´s claim that the depictions of the animals:

> "with a strong outline but with very dimly perceived color, texture, and mass."(1, 224).

is not a solid prove.

Counterexamples, from the same areas and period, that clearly show the opposite, can be found as illustrated.

And even if you look at some of the "flat" paintings like fig. 6, it is evident that the "plane" or the surface inside the (missing)"contour" seems to play an important role to the depicting person or persons. They may have hunted and painted collectively.

In this depiction any kind of dominant contour line is missing.

The hole figure is built up by painting smaller areas that together show the entire body. It seems here as if this picture is constructed primarily to show the bodily spatial and tactile qualities of the animal:

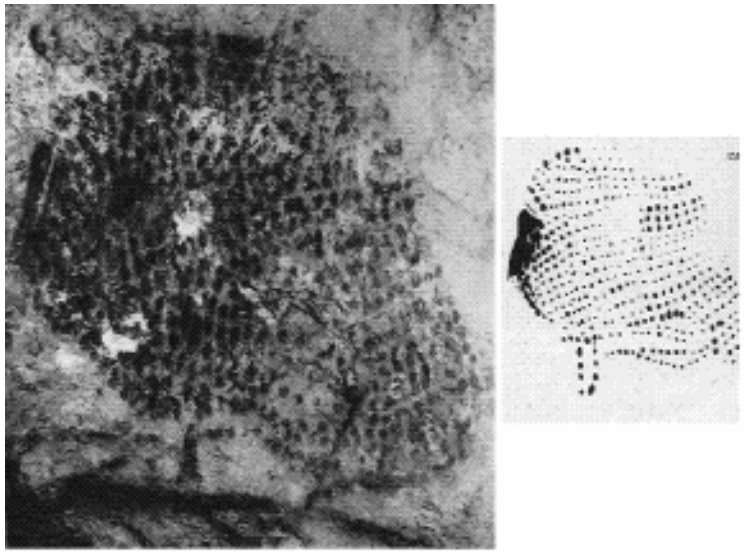


fig. 6. Photo (left) and drawing (right) of the "dotted" depiction of a bison in the cave Marsoulas, France. Length 87 cm.

Halverson analyse the question of spatial dimensions when he describes "projection":

> "...this is a familiar experience of ordinary life, when we see faces and objects in clouds, in frosty windowpanes, in wood panels, or in the fireplace. A few suggestive forms, and up comes a mental image. (Thus Hamlet: "do you see yonder cloud that's almost in shape of a camel?...Methinks it is like a weasel...Or like a Whale")
>
> Caves, with their convoluted, infinitely complex surfaces, offer endless opportunities for such projection, which were in fact exploited by cave artists countless times -it is one of the most certain suppositions about their methods. Seeing a rock swelling or fissure that looks like the back of a bison, they drew the rest of the figure from memory"(1, 228).

I agree that this "projection" is a common phenomenon, and that it has played a basic role in the Palaeolithic depictions.

If you look at fig. 7 you can see, that this phenomenon also play a role in smaller depictions like this engraving on ivory from a mammoth:

This "projection" phenomenon do not just concern major but also smaller elements.

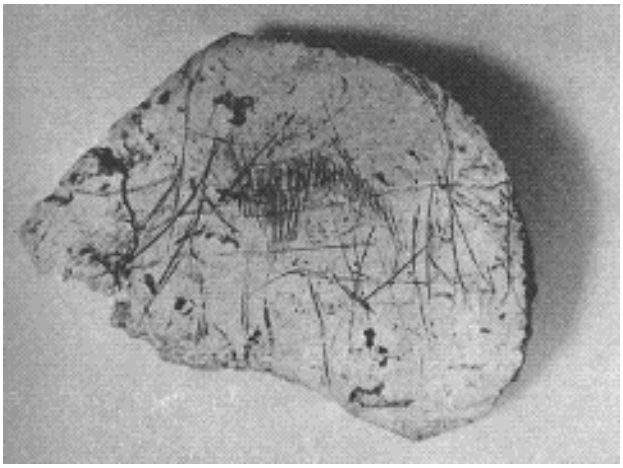


fig. 7. Mammoth. Engraving on ivory. Length 9 cm. Bayern. Germany. Notice that the back and head of the drawn mammoth follow the edge, which suggests a projection.

But I think it is relevant at first to notice, that for Halverson is seems absolutely unproblematic that "they drew the rest from memory", as if no form problems existed, which the just illustrated examples indicate, and secondly Halverson is not at all discussing that the phenomenon of projecting seems to have an extremely clear spatial dimensioning!

If these spatial projections trigger Generalised Mental Images (GMI) it might be because GMI are also spatial!

That is in my point of view one important aspect of the main characteristics. A GMI in not entirely flat.

An overview of Palaeolithic depicting forms:

Referring to the above given counter examples it is possible to conclude that the Paleolithichs did practice a wide range of different forms to make configurations of their animals.

Fig. 8 is absolutely basic for this development:

fig. 8. Footprints around the sculpture shown in fig. 4

This is the first step they have realised: that you are able to create a negative form of parts of your body if you press it into a wet and soft material. This experience might lead to the engravings.

But also positive forms were created by the Paleolithichs, as we have already seen in fig. 4 and 5. In fig. 9 you find an animal that is not showing its profile but a movement:

fig. 9. Sculpture of a bison looking backwards. La Ladeleine. France. Length 10 cm. Musée des Antiquités Nationales, St. German-en-Laye.

Halverson is reducing the Palaeolithic depictions quantitatively to nearly almost "outline" drawings. Statistically they are dominant, but they are just one form of visual expression among several others.

If you look at these various products from a formal point of view, which I think is very fruitful, you will find many different attempts to represent. A scale, already illustrated, that shows that a great many problems of depicting were being dealt with by the Palaeolithic:

1)Prints in clay (fig. 8)

2)Sketching engravings on small portable stones (fig. 1 and 1a) and other materials

3)Sketching engravings on smaller elements showing "projection" (using the spatial form of the element)(fig. 7)

4)"Projection" and depicting "absent" elements (the example showing painted antlers over a hole that looks like a deer)(Lascaux)

5)"Half"sculptures modelled in clay on rock (fig. 4)

6)Relief modelling in clay on rock engraved with texture and painted (fig. 5)

7)Relief sculpturing in rock (fig. 9a)

8)Sculptures out of different materials (fig. 9)

9)Paintings built up by dots (no outline)(fig. 6)

10)Colored paintings

11)Outline paintings

12)Outline engravings

13)Outline engravings that is on its way semiotically to appear as a sophisticated general sign (the reindeer flock in fig. 3)

Fig. 9a. Relief made with a chisel in the rock. Le Roc. France. Length 164 cm.

14)"transparent" painting, so you can see inner parts of the animal (fig. 10)

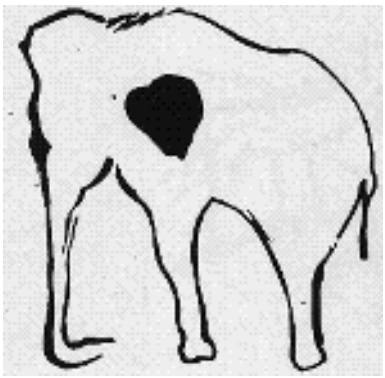


fig. 10. Mammoth. The heart shown. (After Breuil). Cave Pindal. Spain. Length 44 cm.

To go back to the discussion that it is absolutely mysterious if complex phenomena suddenly appear, I think, that Halverson is somehow contributing to the mysteriousness of the Palaeolithic depicting by focusing from a cognitive perspective only on outline drawings, when we actually find more than a dozen different ways of depicting in that culture at that time, as I have just shown above.

If one will try to analyse aspects of a cognitive development in that culture and you are using the depictings of that time, he/she should analyse all the documented ways these people did depict.

The reason is of course, that they probably were not specialised craftsmen in that sense that some people only knew about engravings and only engravings, other people had knowledge about the paintings.

To be realistic, this culture should be considered as a development where "experiments" took place in search to fulfill the intentions of depicting the animals vital for survival. That is why the formal analysis may be a core tool.

The Paleolithichs tried to depict the animals in realistic ways:

> "This art is often called naturalistic, and rightly so, but, as has been pointed out many times, it is quite remote from anything like photographic realism; in fact it could be thought of as stylized naturalism".(226-227).

But they did try many different formal ways. I think it is fruitful to reflect seriously on the possible background for this formal variation in the perspective of naturalistic intentions.

Formal background for formal variations:

If one is familiar with different formal ways of depicting, one will know, that each formal way has its strength and limits.

If one make an outline drawing one miss the colors and shadows.

If one make a sculpture it is highly depending on the often varying light sources.

One will have to make a different texture in a sculpture than in a color painting if one is depicting the same motif and have the exact intentions to get as close as possible to the way the texture in the motif appear.

One can not make direct transfers.

In each case one is confronted with a material, a substance, and one can not do whatever one likes with it. One has to be aware of the immanent possibilities that might be in that substance and try to make it configure one's naturalistic and mimetical intentions in this example.

But two good results will look absolutely different, even if one feel to get close to the targets. Both the substance in the sculpture and the substance in the oil painting might signalise precisely the texture of one's motif, but do it in different ways looking different. If one's intentions are to show single hairs one can never do it in a clay sculpture. One should then choose the oil painting, where it is possible to signalise the intention if one has experience.

So when one depicts one has to choose a medium and accept it as a formally limited potential.

And it is a good idea to have a solid knowledge about different relevant media before choosing, so one can get as close as possible to the intentions.

One has to choose among strengths and limits in the possibilities of each material.

The Paleolithichs were not born with solid formal knowledge of what media they should choose.

The Paleolithichs experimented. And probably after a while became aware of how close they could come in a given substance and tried new ones to achieve what they felt they did not get in the last attempt.

And *combined* these experiences.

They lost the color when they engraved, but painted it afterwards.

They tried to make texture on the half sculptures and painted it.

All the different form I have shown above were developed in attempts to get as close as possible to their intentions under given circumstances. That is why they should be described also from a formal point of view that shows the variety of their struggling with different materials, because this is, as far as I can see, an important part of that cognitive development the whole period represents.

And to question Halverson´s way of describing the outline drawings, it is too narrow, because it is probably because of the formal variation just shown that the Paleolithichs are capable of producing among other visual expressions outline drawings with generally accepted aesthetic qualities.

There is a formally broad background for the entire Palaeolithic development that Halverson overlooks, which I think is risky especially from a cognitive point of view. What we are facing is a formally complex development and not just one statistically dominant genre.

Perceiving in caves:

An other relevant discussion about the depicting of texture, is to ask what the Paleolithichs actually could see in these caves?

As Halverson mentions, the oil lamp is one of the achievements of this period(1, 221).

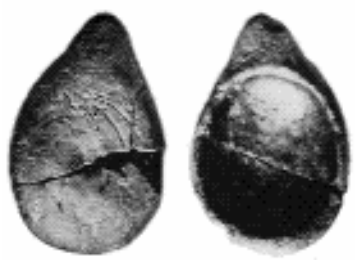


fig. 11. Oil lamps. The cave in La Mouthe. France. Size 17 cm.

But how much can one see using a lamp like that?

Probably not much more than a few square meters relatively clearly. I might look something like fig. 12:

fig. 12. Bison hit by an arrow. Niaux. France. Length 90 cm.

You should experience these depictings in the light they were created and seen. This is quite important for the interpretation. Halverson gives very few comments on the aspects of light in his first article.

We are familiar with reproductions of many of these cave paintings, but reproduced in a form where the light settings differ radically from oil lamp lightening.

Halverson calls most of the pictures outline drawings, because the texture of the rock on which they are painted has not been touched by the artist.

Now if you look at an irregular surface as a rock using a small lamp that spreads the light from one center as an oil lamp, one of the consequences will be, that you will see small cast shadows from each little irregularity that builds a positive form. In this lightening this will create an impression of texture, that will be associated to follow the motif. But -as Halverson argues- you find exactly the same kind of texture right outside the depiction of the animal. That is correct. But the small light source -placed in front of the middle of the quite large picture- only enlighten these pherepheral areas waguely and with longer cast shadows, which might mean that the way the picture has been perceived generally by the Paleolithichs could be as if the texture of the rock was a part of the depiction intentionally not worked on further, because it itself signalised a kind of texture sufficient for the purpose.

I think of the reproduction of these pictures as an unreliable phenomenon because of the artificial lightening when these photographs were taken.

From an analytical and cognitive perspective these pictures should also be reproduced in the kind of enlightening they were born and seen in. By technical development you run the risk to make these depictions to something else, something that they were never intended to be.

You can compare the phenomenon with following later example.

If you add colors to an original black/white film, which is absolutely possible, you make it something else. And that is all right if that is what you, being conscious about the problematic, want to do. But you create something quite different from the original.

An analogical discussion will debate how we generally interpretate the phenomenon of movement later in the article, because Halverson´s conception, as I will illustrate, reflects our present general conception, that it severely dominated by the emergence of the moving picture.

But that is not the only one existing and certainly not the Paleolithichs.

My conclusion is of course that these pictures should as well be reproduced in the correct lightening from oil lamps in photos and films, so you could perceive and analyse the reconstruction as close to the Palaeolithic experience as possible.

That is a clear cut combination of an empiricists and a hermenueticians point of view.

Different cultures different centers of attention:

If you look at fig. 12, you see a picture of presumably an arrow that is intended to kill the depicted animal.

The Paleolithichs seem to pay a lot of attention to that area where you find the animals vital organ, the heart.

Hitting that deeply you have a good chance to kill it.

The mammoth in fig. 10 shows in a transparent way the same phenomenon.

fig. 13. Horse with lots of wounds. Clay relief on a wall. Montespan. France. Length 30 cm.

Fig. 13 illustrates what kind of importance hunting played in that culture and suggests that it is not that easy to kill wild horses. And again you see the main interest shown to the body of the animal.

If you compare that to one of Halverson´s examples of a generalised mental image -which this horse also must represent according to his theory- you find great differences concerning the center of attention in his imagining of a cow:

> "The components of the image would no doubt include a face with muzzle and a large brown eye, horns and ears, a tail, legs, and probably an udder; it may or may not have hooves."(p.224-225)

You may ask: why do we see muzzle if only essentials are represented in canonical images and you may also wonder what that large brown eye in the face with muzzle is doing in this emphasised position. It is only the head Halverson describes with details.

So it seems as if the center of attention might turn out to be different in different cultures, which is not surprising because of the different relationship to the animals the two cultures represent. However it is not an explicit part of Halverson´s analysis.

Fig. 14. Cow. Length 170 cm. Lascaux. France.

If you look at fig. 14 it is interesting to compare the size of the head with the size of the rest of the body that seems enormous. There is a lot of "meat" jumping around here, and this dimensional phenomenon is quite common.

You can also see it in fig. 15, that is called a roaring bison; but it is more likely to show a dead bison. If you look at the hooves the first interesting thing is that they are present and not absent, which is typical for the paintings, and the second interesting phenomenon is the angel of the hooves; they seem to be seen from a position where the animal is lying down, as Abercombie 1960, 10) has pointed out. See fig. 16.

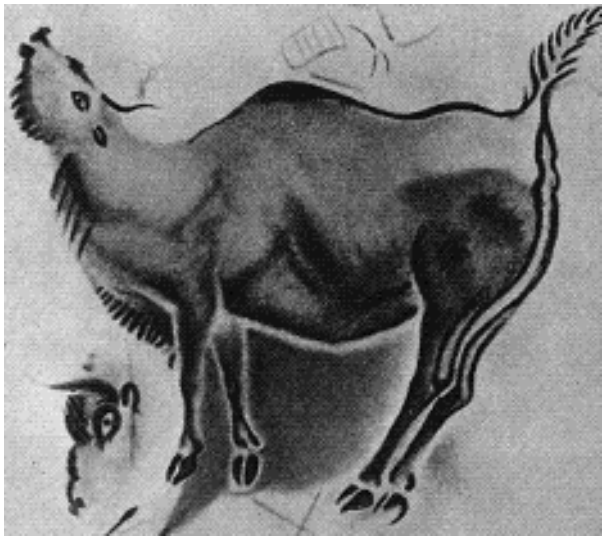


fig. 15. Roaring bison. Altamira. Spain. (after Breuil). It might also be interpreted as a dead animal.

The third interesting thing about fig. 15 is the study of muscles, which also could support the interpretation of a dead animal. But you also find significant studies of muscles on depictions of animals that are undoubtedly shown as being alive, as we shall see later.

I think Halverson presents a problem -or even a contradiction- he does not solve, if you compare following two quotations:

> "Details such as hooves would be a secondary elaboration, derived from the semantic code and perhaps motivated by an artistic impulse towards completion. This suggestion may find support in the fact that when hooves are represented, they are often in inappropriate perspective, as if mental images of feet were formed separately, from carcasses or tracks viewed from different perspective from that of living creatures (Guthrie, 1984; Mithen, 1988)".(p. 227)

> "Nor are there any depictions of identifiably maimed or dead animals (Leason, 1939; cf. Ucko & Rosenfeld, 1967, pp. 185-186) The Paleolithic artists had to have seen many animals many times in such conditions, but they chose not to depict them"(p. 226)

Halverson´s severe problem is of course that the following and the former illustrations may represent a mixture of as well General Mental Images as recalling of concrete perceptual experiences, which oppose Halverson´s theory, or that one GMI (the corpus) is combined with another GMI (the feet/hooves), a possibility he does not debate.

Fig. 16 show tracings from photographs of dead animals (b,d). You will recognise fig. 15 as 16c. 16a is also an Altamira depiction called a "trotting boar" and 16b a slaughtered pig. Fig. 16d is a dead sambur hind.

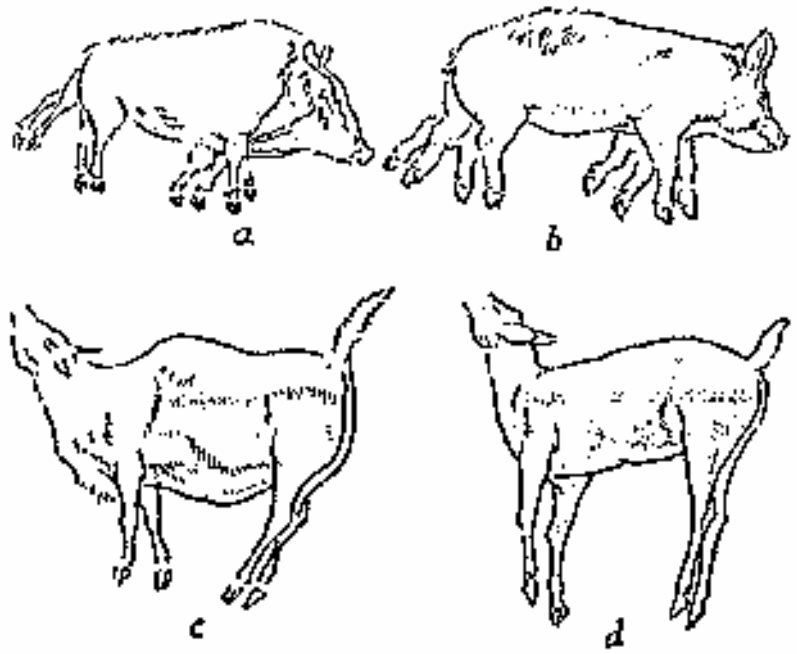


fig. 16.

The general suggestion about how the Paleolithichs did perceive their animals, I think, is:

-that they saw these animals on the whole scale from far out to close up distances

-that they saw as well living as dying and dead animals

-that they used a lot of time to watch these animals and

-that this wide visual experience was an essential part of their mental background for depicting the animals.

Another important aspect is that they seem to have done a lot of depictions, much more than archaeologists have found, because the Paleolithichs probably also used a lot of less solid materials than rocks, stones and bones, as Halverson also mentions:

> "The question remains whether depictive activity, besides *reflecting* such a development, may also have had an *instrumental* role in it. This might seem doubtful because most of the surviving depictions come from relatively inaccessible caves, most of which (but not all) have left few signs of frequentation. From the archaeological remains, it would appear that there could not have been sufficient *presence* of art to have had any significant influence on cognitive life. But this may be only an accident of preservation. As Guthrie and others have pointed out, "The skill and development of much of Paleolithic art which has survived suggests such an extensive artistic activity that one can suppose that drawings and paintings were once a common feature in Paleolithic Europe"(Gurhrie, 1984, 9. 36)(p. 233)

So what we are analysing is probably a culture where well known objects are depicted over and over again.

Depicting as a cyclic process:

"What is successive in perceiving is simultaneous in the picture", Sartre remarks.

But either you are drawing a picture of something you can either see at the moment you are drawing it or you are drawing something you once saw from memory, is in each case a *process*, which as a natural part includes a successive perceiving of the picture plain, the surface you are drawing upon and the development that takes place there. You do not usually close your eyes for longer periods when you are drawing.

If you are drawing from memory perceiving the progressing drawing you are producing is simultaneously connected to your imagination.

In Halverson´s way of describing these phenomena one core aspect is not given the value it deserves from my experience and point of view: the process of depicting. There is an ongoing cognitive correspondence between the depiction you are gradually producing and perceiving and your memory. They have potential influence on each other.

Halverson argues:

> "Conscious analysis, of the kind I am attributing to prehistoric art critics, would bring tacit knowledge into consciousness. Depictive activity may have carried the same implications, judging by what are evidently drawing corrections. Erasure being very difficult, the artists have often left lines that seem to be false starts. Drawing is a sequential process, and the artists may have had to pause from time to time to ask themselves if they were getting it right (according to whatever vision of correctness they may have had), that is, to reflect on what they were doing and analyze it"(229).

In Halverson´s description there is only mentioned one way of how changes on what is produced can emerge: if something is seen and analysed to be false you try to make it correct. And that is true. But there is more to it.

It is correct to determine some of the "extra lines" as mere faults. But the analysis is not a "from time to time" analysis, as Halverson describes it, but an ongoing permanently active critical dimension. And there is an other highly relevant possibility that Halverson is never aware of: a new possibility might turn up: what was meant to indicate something intended turns out to show something slightly different that looks convincing; what will the artist do then? Keep it and try to develop it or try to go back to the former intention?

This is a core question well known from artists and pedagogic on art teaching.

The picture surface one can influence -as we all know- by painting on it, but in many cases it will not respond exactly as one is expecting:

an imagined line is not the same as a drawn line,

it may be false and one produce a new line in consequence of that according to Halverson´s point of view, but it may also be a bit different from what one expected but be surprisingly significant it the sense that it actually does show characteristics that one was not aware of just before the moment one produced it, but now recognises and realises exactly the moment one has seen them emerge.

If that happens -and it often does during depicting processes- one will probably keep it and try to develop it further.

This is not just the beginners experience. It is correct that it is more common among inexperienced people, but any serious artist keeps the respect for this problematic: when one face the picture plane and starts working on it one *starts a battle* between one's intentions and what emerges on the canvas or whatever one is depicting on.

The depicting persons imagination is trying to guide the intended transfer of imaginative simultaneous forms to depicted forms. And forms are here complex phenomena covering: shape, rhythm, color, texture, movement.

In this transfer process the imagined form of the imagined object (=a) and the form of the potential and over time appearing concrete depiction (=b) differ in following ways:

(a) is a representation of forms, it represents imagined simultaneous forms that has complex varying substance coming from the generalised perceiving of the animal,

(b) is concrete substance, a wall in a rock in a cave and paint.

These two absolutely different forms of substances do not correspond very much ("projection" being the only exception) before (b) is manipulated, before imagined

experienced, features from the General Mental Image, are becoming representations in the concrete but fundamentally different substance.

And to get that far several obstacles have to be dealt with.

To describe these differences it is relevant to consider following Danish painters statement in the development of modernism.

In a famous article about modernism titled: "Unknown Obviousness about Painting", Emmanuel Ibsen (1944) 13) points out that for a painter two fundamentally different worlds are existing:

-the one we are living in, and

-the one existing on a pictures surface with its own universe, laws and rules.

These two worlds are totally different in his point of view, but they sometimes may look like each other. That should not make you make any confusing mistakes. Modern painters do not, he claims. And in modernistic pictures it is actually very often obvious that the world existing on the picture plain builds its own unique world.

All the features of the General Mental Image should be present simultaneously if we interpret Sartre's point of view in this context. Probably no one would disagree on that. But practically all the potential representations of these features in the intended drawing necessarily have to be given a priority before they can begin to appear and be visible on the surface of the rock or whatever surface chosen for the depiction. You can not possibly depict all the features simultaneously. It is a clear cut impossibility for practical and logical reasons.

The depicting person has to make choices of where to begin and how to begin. Depicting an animal he has to split up the depicting process in:

-where to start

-the shape of parts of the depicted animal (many depictions are just showing parts)

-the overall shape of the depicted animal

-an often unconscious choice of point of view to the imagined animal

-the colors of the depicted animal

-the textures of the depicted animal

-a probably unconscious choice of "rhythm" in the imagined object (se the later description of movement)

Having made choices of where to start and how to begin and having realised the first concrete stroke (or engraving) the process of critique is *immediately* active:

-does that stroke signalise the artists exact intentions?

-if not corrections may be made as Halverson suggests, or

-this unfinished depiction makes the artist aware of more -but until now overseen- significant aspects which

-alters the development of the depicting process qualitatively

What we find here is a cognitive cycle going on during the whole production of the depiction. It is not just a phenomenon turning up sometimes when the artist has a pause. It is permanently present, active and influencing. Depicting is a critical cyclic process over time.

Halverson mentions the phenomenon of critique as if it is only active after the realisation of faults in the depiction, which is narrowing the whole problem: critique is certainly also -and even more important talking about qualified visualisations- basic for developing emerging potentials. And we are talking about depictions that do seem to show a lot of artistic quality in Palaeolithic depictions. That underlines the relevance of the potential dimension of critique as a basic fruitful elaborating part of the analysis not to be overseen.

Exactly at the moment where an overlooked significant aspect emerge in the depiction, which I claim it often does, I also claim, that you find at least one of two points of departure from the General Mental Image towards concrete experiences of life.

In this first point a retrieving process is started to confirm or neglect the authensity of what has just turned up. One is now no longer spontaneously following generalised imaginations, but comparing several former experiences from life in one's visual reservoirs. The artists consciousness switch from imaginative to re collective levels, which means a switch from imaginative consciousness to stored perceptual consciousness.

That gives you one of the core arguments to explain why it is not possible to depict a Generalized Mental Image.

The second one turns up in the moment where the depicting person suddenly and unexpectedly face troubles by trying to remember aspects of what is just about to be depicted, asking himself, how does that element/part/form look?

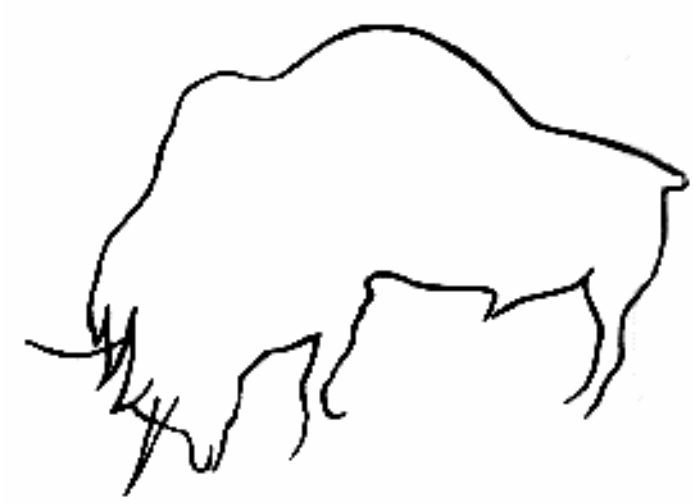


fig. 16a. Painting of bison. Pech-Merle. France. Size. 60 cm.

Also here a retrieving in stored visual memories from life starts and continues until the problem has been solved in a satisfying way.

If is turns out to be impossible to solve the problem for the moment, it may often lead to a renewed interest to watch the depicted object in nature next time it is possible, which establish a new perceptual cycle which only appears because it is integrated in a concrete depicting process. If the same problem is seen from a linguistic point of view, the person probably would not have been aware that some knowledge is missing! That is why it is important to be exact about what trigger canonical images.

Sartre gives a good example of it:

> "...people claiming to have a mental image of the Pantheon are quite incapable of counting the columns..."(p. 225)

And Halverson concludes rightly, quoting Sartre, that:

> "...the "imaginative consciousness" is distinct from "perceptual consciousness". Imaginative consciousness, for example "presents the object to itself as entirely undifferentiated", as a "synthesis" that may even have contradictory aspects; the object of the image "presents itself as existing elsewhere" or as not existing at all (Sartre)." (p. 225).

But what Halverson oversees in his achievement over Sartre´s sharp general statements is that they do not have the concequence that the "imaginative" and "perceptual" consciousness do not interact. They certainly do during the process of depicting. But they do not seem to do if they are triggered by linguistics.

And for good reasons Sartre's main point of view is linguistic, he wrote all his life. But that is not what Halverson is discussing.

He is in stead using these "linguistic" points of view on a non linguistic subject. And that is a fundamental mistake, in my point of view. That makes his theory a false theory.

Reduction and simplicity:

To build out this explanation theoretically, I think, it is important to analyse the question of how "reduced" and "simple" the Paleolithichs depictions are, even the so called outline drawings. Are they simple at all? And further more ask following two questions:

1)what is meant by simplicity?

2)and what is the background for being able to produce visual simplicity?

Halverson tends to reduce too much the complexity of the analysed outline drawings from an aesthetical angle of viewing, as far as I see it. About the phenomenon of reduction he claims in his second article:

> "Outline depiction is, to a great extent, a matter of simplification, i.e. the reduction of visual information to bare necessities. Above all it involves the reduction of complex optical arrays to lines, but the limitation of linear depiction to salient and diagnostic features is also involved. Paleolithic art is thoroughly grounded on the principles of formal simplification and accentuation of salient features, ie those gestures most useful for identification, such as horns.
>
> Fig 4 shows some fairly typical examples of Paleolithic art. They are immediately recognizable as a rhinoceros, an ibex, and a horse, despite extreme simplification (and some distortion). Most obviously they are in "strict profile" with only two legs represented and, in case of the ibex, only one horn. This is visually unrealistic, for it is hardly possible to find a point of observation from which a real animal would appear so. None of the animals has feet. The rhinoceros´larger horn is unnaturally thin and no ear is shown, although the modern rhinoceros´large ears are conspicuous even in profile. The arch of the ibex´s horn is unrealistically shallow. All the creatures lack eyes and nostrils, and have no pictorial cues for solidity; in fact they have no insides at all,only, in situ, the quite visibly textured rock surface that is continuous on both sides of the outline"(II. p. 394)

Figure 4. Typical examples of Paleolithic cave art.

A critical formal remark about the second article is that the illustration above shows three depictions from three different locations. It is a part of fig. 1 in his first article, where he does refer exactly to the findings.

What is especially problematic in Halverson´s analysis here is that in spite of his descriptions of these depictions, Halverson does not with one word mention, what I think is quite aesthetically obvious, that the ways they are depicted show at least two different ways of depicting.

You can -as Halverson correctly does- say about all three depictions that they represent reductions, but different stylistic kinds of reduction.

If one looks at the rhinoceros it has a very clear regular curved outline. If you compare that with the ibex and the horse you find much more irregular, but also curved outlines.

The outline in the rhinoceros depiction is stylistic much more elaborated than the two others. This is absolutely not the first depiction this person produces of a rhinoceros. It has been developed by doing it over and over again. And perhaps combined with the production of smaller sculptures of that type of animal. This absolutely clear form of the object might indicate something like that quite strongly. Tactile experience is probably involved here. The formal clearness of the rhinoceros is the dominant stylistic feature. Aesthetically one can say that the clearness of this form is fulfilled, and it still has full communicative significance.

The depictions of the ibex and the horse show a different style. They seem less reduced. From a formal point of view they seem much more caring for details in spite of the also dominant reduction aspect. Look at the line on the ibex from the lower part of the head to the end of the front leg. It signifies details about form and muscles. It is an absolutely different stylistic way of depicting than the clear form style on the rhinoceros. And if you look at the horse, especially the back part of the back leg, you will discover similar stylistic aspects, but you might here suggest two different interpretations:

-that the form of the back leg suggests movement, this horse seems to signal being standing and at the same time showing aspects of movement, or, perhaps more precisely,

-being just about to move, signalising a tension in the back leg.

Which of these interpretations is the correct one will probably remain as an unanswered aspect for ever, but what you can conclude as facts are, that inside what Halverson spilt up as a kind of "category" outline drawings, you find more than one style and that the aspect of elaboration differ.

Following example of findings among native peoples drawings nowadays seems stylistically to be related to the one of the the rhinoceros concerning the aspect of depicting the same motive over and over again, depicting certain specific motives as a routine:

fig. 17. Australian native painting a crocodile starting with the tail.

Halverson is likely right when he argues that the Palaeolithic depictions are:

> "...a maximation of relevant information (a profile view of a cow provides more information about it than a rear view, for instance.)..."(p. 225-226).

But when Halverson is determining the maximation, he oversees the most important parts of the process aspects. If one should describe this rhinoceros the great amount of repetitive work is essential, or else it would be a presentation of one of these mysteries that Gregory point out that we never see. And at the same time also be aware of the two other drawings of the ibex

and the horse as depictions that absolutely are not the first attempts of depicting from the artists. But aesthetically they have a different course.

Neisser´s cyclic schemata model:

To build out the argumentation that what it going on in Palaeolithic depiction as processes over time Neisser´s cyclic schemata models are relevant. 7)

> "In my view, the cognitive structures crucial for vision are the anticipatory schemata that prepare the perceiver to accept certain kinds of information rather than others and thus control the activity of looking. Because we can see only what we know how to look for, it is these schemata (together with the information actually available) that determine what will be perceived. Perceiving is indeed a constructive process..."(p. 20)

Perceiving is here characterised as a mental and bodily active process. It is based on the building and existence of visual imaginative anticipations with a certain significant structure. That is an ongoing constructive process:

> "At each moment the perceiver is constructing anticipations of certain kinds of information, that enable him to accept it as it becomes available. Often he must actively explore the optic array to make it available, by moving his eyes or his head or his body. These explorations are directed by the anticipatory schemata, which are plans for perceptional action as well as readiness for particular kinds of optical structure. The outcome of these explorations -the information picked up- modifies the original schema. Thus modified, it directs further exploration and becomes ready for more information." fig. 18.:

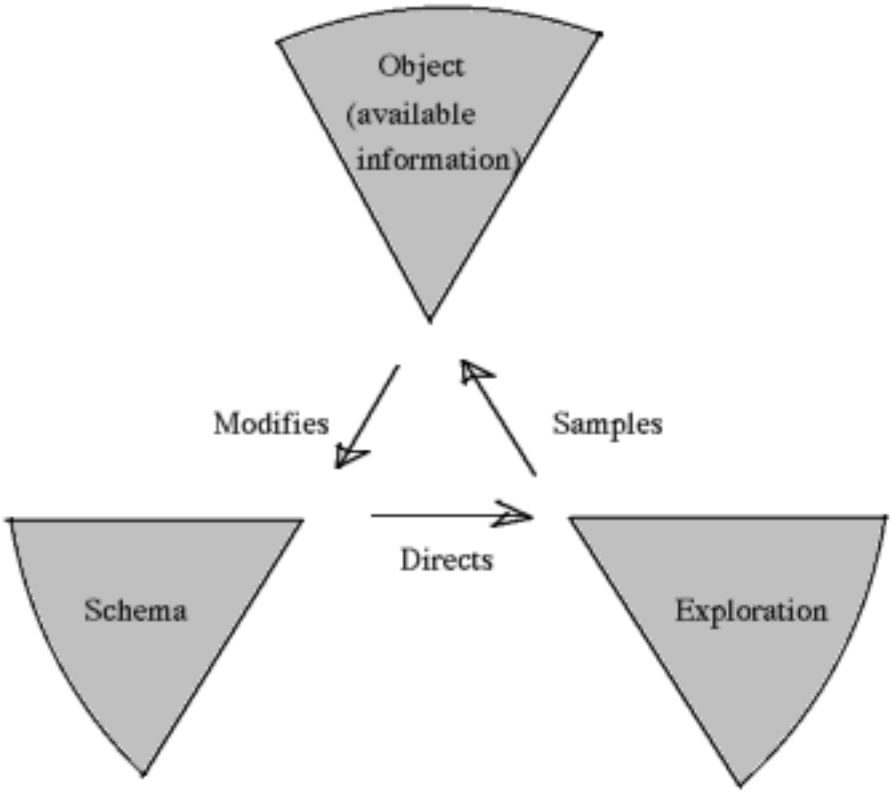


Figure 18. The perceptual cycle(p. 21)

This cyclic perceptual activity is relevant to analyze when we try to describe the Paleolithichs depictions that we see as based on their experiences from their hunting activities. For that purpose fig. 19 is relevant, because it explicitly includes the concrete world, which James Gibson pointed out before Neisser 7).

It opens the essential question whether Neisser´s schemata and the canonical image - which here also means Halverson´s GMI- are identical phenomena.

As far as I see it, Halverson´s general mental image, once established over a period, becomes a static phenomenon in contrast to Neisser´s schemata that have clear dynamic dimensions.

It seems to me that once a general mental image is established in Halverson´s universe it remains unchanged. So concerning the question of dynamics Halverson´s and Neisser´s basic concepts differ because in Neisser´s model the schemata can be and actually are developed in a cognitive development that follows concrete peoples concrete experiences and lives, as for example, the Paleolithichs.

I think, that what I see as this lack of cognitively essential dynamic aspects in Halverson´s concepts, is the basic difference to Neisser´s more concrete and detailed analysis of the perceptual functionality. This has some important consequences for the higher mental processes based on the detachment of schemata from the original perceptual cycles:

> "To be sure, schemata can be detached from the cycles in which they are originally embedded; such detachment is the basis of all the higher mental processes. What happens then is not perceiving, however, but imagining, planning, or intending."(p. 23).

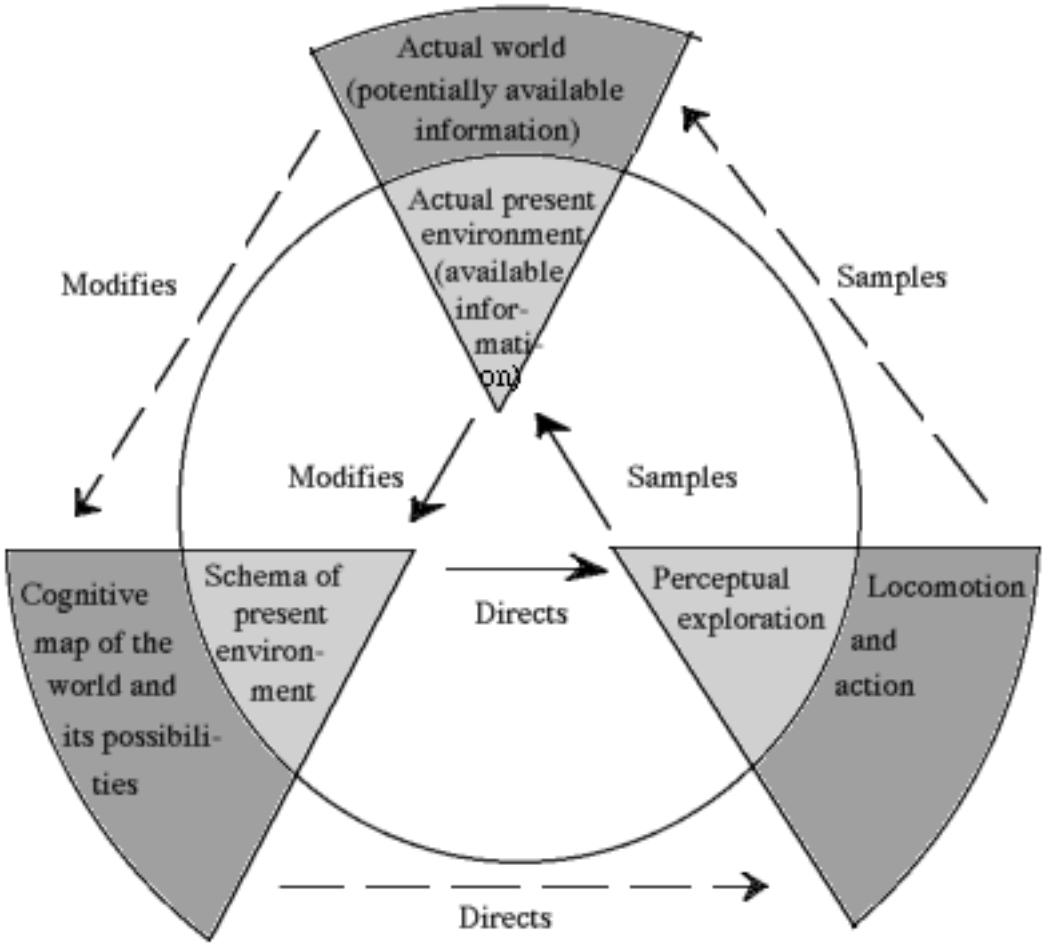


fig. 19.

Drawing a canonical image, the core subject discussed here, is always a transfer from imagination to concrete realisation of a depiction, which is a clear detachment, a point of view I think Halverson would support with reference to his analysis of cognitive levels.

But Halverson oversees vital consequences of obstacles for exact depicting that he -which is a paradox- mentions himself:

-that a GMI is:

-"not a very precise, detailed or stable image"(I, p.225)

But there is much more to it than that, that Halverson miss in his attempts to simplify the theoretical explanation. It turns out to be an oversimplification. The Palaeolithic depicting we are facing are not canonical images, but depictions that show *some* features of canonical aspects, and *a lot more* than that. They also indirectly show clear evidence of interactivity between different cognitive levels switching form generalised experiences to concrete specific percepts from life.

As soon as the concrete configuration is started by the depicter, which means that the schemata is detached, a new critical cyclic process is activated, permanently seeking to establish and guide the complex formal transfer of imaginative phenomena to concrete phenomena, and permanently reacting towards the process, facing the immanent obstacles that become evident during the emergence of the depiction:

-that faults can show up, as Halverson mentions

-that lack of knowledge that often turn up (how do pherepheral features look in an imagination that seem to have an unconscious center of attention as earlier examples have shown (the pherepheral back leg for example, what shapes and curves do we find on the back part of it, and how are they combined?),

-visual re-examination of the absent or problematic features for depictive purposes the next time access is possible; the depicter will look for gaining a specific knowledge

-that aspects -more significant than spontaneously expected- turn up, potentially signalising two different aesthetical styles:

1)the highly elaborated reduced significant form (the rhinoceros example)(which is potentially an aesthetical phenomenon you can follow all its way to present modernism and still being of significant rhetorical relevance, as Ibsens arguments reveals); about this type of highly reduced form as the rhinoceros you can say from an aesthetical point of view that it gains a certain amount of one kind of stylistic autonomy.

2)the reduced (but less reduced) more naturalistic significant form (the ibex and horse example), which also has underlying formal obstacles.

But here we face a severe basic research problem, that we have got no solid theory about what visual expressivity is.

One of the relevant contributions for basic scientific purposes like that, also relevant in the perspective of interpretating Palaeolithic depicting, is the French sculpturer Auguste Rodin´s view on the phenomenon of movement. 8)

From the point of view of analysing the phenomenon of movement fig. 20 is an unusually interesting photo showing the back and side of Rodin´s sculpture John the Baptist:

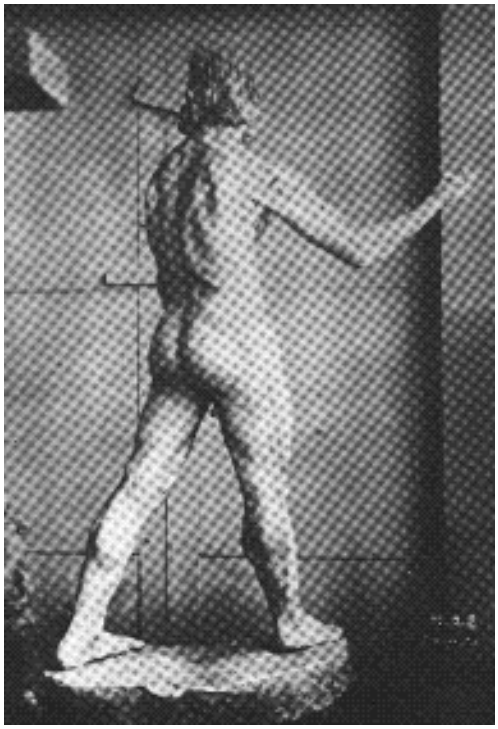


fig. 20. Photo of Rodin´s sculpture: John the Baptist

Rodin himself gives following description of it in a letter to Danish mecenas Jacobsen:

> "Notice...how John the Baptist is showing movement and still having both feet on the ground. A snapshot of a model showing the same movement would probably reveal that the back foot was lifted and on its way forward - or perhaps even more likely the opposite: that the front foot still had not reached the ground if the back foot was in the same position as in my sculpture. That is why a photography shows the peculiar view of a human being, who is suddenly fixed and stiff in his movement" (8 , p. 10. BL-translation)

Rodin´s sculpture is objectively fixed in the substance in which it was created, but, as a remarkable and relevant paradox in visual rhetorics, it signals tension and seems to be moving.

Tension and Palaeolithic depiction:

In my interpretation of Palaeolithic depicting you find a related kind of tension in many of the depictions. Following three illustrations show aspects of that:

fig. 21. Deer. Niaux. France. Length 81 cm.

This deer is not moving, but signalising tension as if it was just about to do it. The back legs seem ready to jump.

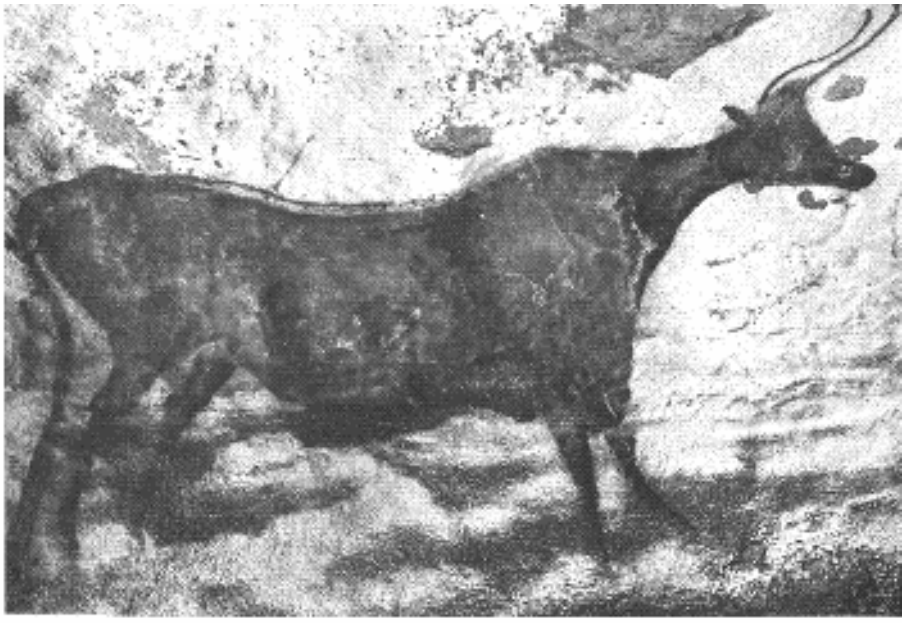


fig. 22. Cow. Lascaux. Length 9´ 3´´

The animals in fig. 22 and 23 show a lot of knowledge about muscles and experience of how to depict that knowledge. It seems to signalise to be alive, or at least to signalise that the depicter has had a rich experience of seeing cows alive.

In my point of view these depictions -although the motif being in canonical positions- seem far away form Halverson´s descriptions of a prototypic basic level canonical image.

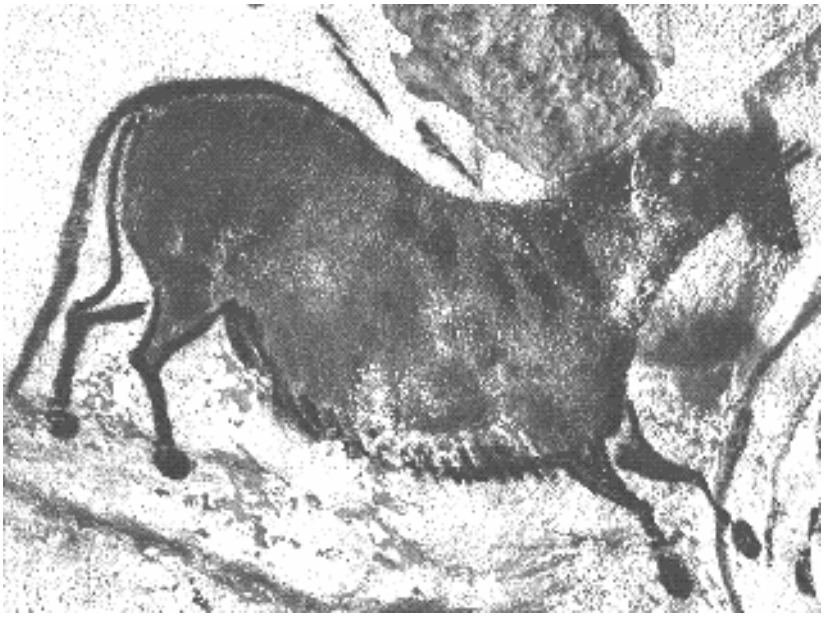
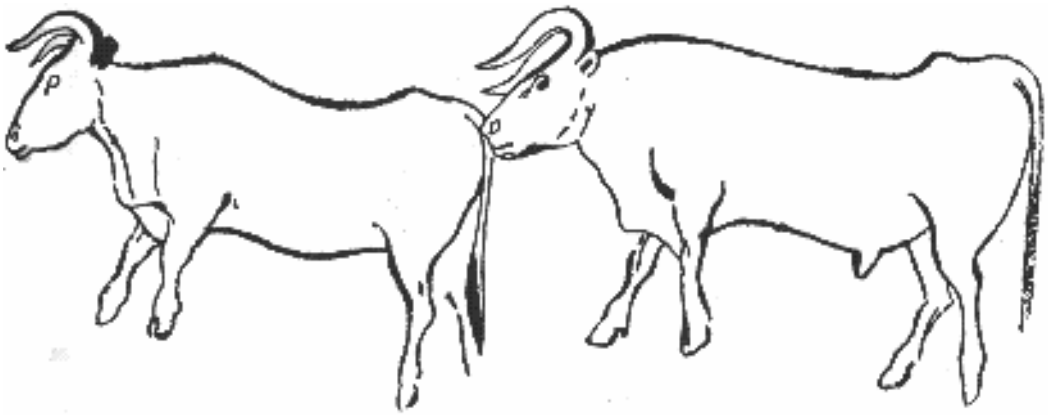


fig. 23. Horse. Lascaux. Length. 41 inches.

Eysenck and Keane´s description of the basic level as a non static level is relevant here:

> "That is, one's experience with the instances of a category will lead to differences in one's basic level". (9, p. 268)

The Paleolithichs as hunters were "specialists" on the animals which had severe influence on their basic level imagination, a phenomenon that is simultaneously developmentally intertwined with their growing depicting experience.



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> "Læg...mærke til, hvorledes Johannes Døberen er fremstillet i bevægelse med begge fødder på jorden. Her ville et øjebliksbillede af en model, der foretog samme bevægelse, sandsynligvis afsløre, at den bageste fod allerede var hævet og på vej fremefter - eller måske snarere det omvendte: at den forreste fod endnu ikke havde rørt jorden, hvis den bageste fod indtog den samme stilling på fotografiet som på min skulptur. Derfor viser fotografiet det løjerlige syn af et menneske, der pludselig er lammet og stivnet i sin bevægelse..."(, p. 10)

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